

Amendments to the Claims

Claims 1-3 (Cancelled)

4. **(New)** A cell analysis and sorting apparatus comprising:
a first channel into which a fluid containing samples is introduced, the samples being introduced by a laminar flow into a sample-separating portion;
second and third channels arranged symmetrically on both sides of the first channel, a pair of streams of fluid which are made to meet in the sample-separating portion and which contain no samples being introduced into the second and third channels;
means for selecting samples at the sample-separating portion;
a sample recovery channel disposed downstream of the channel into which the samples are introduced such that the fluid containing a sample selected from the sample-selecting portion flows out in a laminar flow; and
a pair of fluid passages which are arranged symmetrically on both sides of the sample recovery channel and into which unwanted samples are discharged;
wherein flow velocity of the fluid is controlled according to the difference between the height of the liquid surface of the fluid introduced into said channel and the height of the liquid surface in the channel downstream of the sample-separating portion.

5. **(New)** The cell analysis and sorting apparatus of claim 4, wherein the sample-separating portion is equipped with external force introduction means for introducing an external force to unwanted samples to be discharged.

6. **(New)** The cell analysis and sorting apparatus of claim 4, wherein at least one stereoscopic microscope image and one fluorescent microscope image are made to correspond to each other at the same time by referring to their mutual positional relationship when the channel into which a fluid containing samples is introduced is observed with an optical microscope.

7. **(New)** A cell sorting and analysis system using a cell analysis and sorting apparatus of claim 4 and an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about the obtained stereoscopic microscope image and data about an observed image owing to the fluorescent microscope image.

8. **(New)** The cell analysis and sorting system of claim 7, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto the photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

9. **(New)** The cell analysis and sorting apparatus of claim 5, wherein at least one stereoscopic microscope image and one fluorescent microscope image are made to correspond to each other at the same time by referring to their mutual positional relationship when the channel into which a fluid containing samples is introduced is observed with an optical microscope.

10. **(New)** A cell sorting and analysis system using a cell analysis and sorting apparatus of claim 5 and an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about the obtained stereoscopic microscope image and data about an observed image owing to the fluorescent microscope image.

11. **(New)** A cell sorting and analysis system using a cell analysis and sorting apparatus of claim 6 and an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about the obtained stereoscopic microscope image and data about an observed image owing to the fluorescent microscope image.

12. **(New)** The cell analysis and sorting system of claim 11, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto the photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

13. **(New)** A cell sorting and analysis system using a cell analysis and sorting apparatus of claim 9 and an optical microscope, wherein a stereoscopic microscope image in at least one wavelength region of samples within said first channel of the cell analysis and sorting apparatus and a fluorescent microscope image in at least one wavelength region of the samples within the channels of the cell analysis and sorting apparatus using exciting light of a certain wavelength are observed with an observation lens fitted to the optical microscope, and wherein the samples are analyzed and sorted by comparing and analyzing data about the obtained stereoscopic microscope image and data about an observed image owing to the fluorescent microscope image.

14. **(New)** The cell analysis and sorting system of claim 13, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto the photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.

15. **(New)** The cell analysis and sorting system of claim 10, wherein observed images of plural different optical wavelengths obtained by the observation lens are focused onto the photosensitive surface of an observational camera fitted to one optical microscope, and wherein data about the obtained focused images are compared and analyzed, whereby the samples are analyzed and sorted.